

(19)



JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

(11) Publication number: **11300446 A**

(43) Date of publication of application: **02.11.99**

(51) Int. Cl

**B21K 1/30**

**B21J 5/12**

(21) Application number: **10109838**

(22) Date of filing: **20.04.98**

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**(54) PRODUCTION OF HELICAL GEAR**

**(57) Abstract:**

**PROBLEM TO BE SOLVED:** To make it possible to produce a gear having high accuracy by upsetting a blank with a die having a tooth profile for tooth profile formation which is broader than the tooth thickness size of the tooth profile to be produced and has a helix angle small in a pressurization direction, then shaping the tooth surface with a die having the tooth profile for tooth profile shaping meeting in the tooth thickness size and helix angle identical with each other.

**SOLUTION:** The blank is first set in the first die and is pressurized by a first punch. The blank is then guided to the slope of the tooth profile and while the blank is rotated, the blank is pushed into a cavity. Accompanying this pushing action, a helical tooth profile 12 bulges at the circumference of the blank and a performed molding is formed. The helical tooth profile 12 is formed wider than the tooth thickness size of the tooth profile to be produced and larger in the helix angle of the tooth surface 13. Under fills 13 are generated at the front end of the surface pressed to the tooth profile and the rear end of the opposite surface thereof. When the performed molding is set in the second die and is pressurized by a second punch, the tooth

profile surface is shaped and the finished product having the tooth profile extremely faithful to the desired shape is obtd.

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